THE EFFECT OF NON-MEDICAMENTOUS ENCLOSURE AND "DERMATOLOGIC REST" ON ECZEMA

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It is generally known, that eczema, in all its forms, reveals the pecularity of being able to respond—although often temporarily—to the many varied treatments in use in different clinics. We do know that treatments, which proved unefficacious when applied at home, and even for a long time, prove beneficial in hospital. Moreover it is known that eczema may return to normal due only to hospitalization ("sanatio spontanea nosocomialis" Siemens) or to a change to another place. Ointments and other medications may often mask a spontaneous recovery, as is clear, for instance, from the fact that the patient, after having left the hospital, may quite soon get a relapse, despite the continuance of the treatment which had been found so beneficial.

The questions which we therefore asked ourselves were:

(a) Does the patient, on admission to the hospital, recover because of *psychic* rest, or is it the *physical* rest that cures the eczema—assuming, of course, that he really takes the rest. (This is hardly ever the case during treatment at home, whatever patients may tell the doctor.)

(b) Are the spontaneous cures sufficient evidence of the allergic nature of the eczema, and does hospitalization really preclude the presence of allergens (particularly the guilty ones!) to the point of ensuring the patient's recovery by admission alone?

(c) Do ointments, both as regards their bases and as regards the specifics they contain, really play the important part we attribute to them? Why do so many *various* treatments result in cure? We hasten to add that we do not doubt the effect of ointment therapy. We merely question the extent to which a physical—or perhaps a psychic—influence may predominate over the chemical effect.

In order to find out whether the patient, by admission to the hospital and a change of surroundings, experiences either a physical or a psychic rest, or both, resulting in a beneficial effect on his eczema, we conceived of the idea of leaving the patient, together with his psyche, to his customary life, and of merely "hospitalizing" a part of the diseased skin, i.e. to give it a rest. As a first attempt to achieve or approximate this situation, 100 patients with chronic eczema—see detailed description below—were bandaged in plaster splints. This method of investigation was suggested to us by the case of a young man who had been treated for years for a lichenified eczema of the hand without any success, but who recovered within a few weeks when the hand, on account of a fracture, had been fixed in a plaster splint.

Before proceeding to describe the cases treated, the technic of the treatment should be explained.

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PROCEDURE

Only those patients were selected who had not been cured of their eczema by the usual methods of treatment, whether in a hospital or not, and whether or not combined with X-ray therapy. X-rays were to have been applied at least six months previously, in order to preclude late reactions. During the treatment of part of the body—usually a hand*, arm or leg, but sometimes the face, either no treatment was applied to the rest of the skin, or the treatment was continued with non-specific ointments that the patients were already using (in the case of specific ointments only the bases were used), and which had proved a therapeutic failure. The first ten patients were given a plaster splint, without previous cleaning of the skin, and without any ointment. The splint was applied in such a way that the arm or leg was immobilized at the joints, and thus forced into complete rest, as in the treatment of a fracture. The splint was left open on the flexor side of the arm, or at certain parts of the leg, in order to enable us to follow the course of affairs. Later on, subsequent patients had the diseased arm, or the leg, enclosed in the plaster bandage, the joints—providing they were free from eczema—no longer being fixed. The patients, therefore, were able to move the extremity, although mobility was considerably restricted. In the case of these bandages, enclosure was considered more important than immobilization. A certain degree of rest, however, was ensured.

SURGICAL VERSUS DERMATOLOGIC REST

Here "rest" should be thought of in two ways: (1) as *"surgical rest"* i.e. complete immobilization, including the joints, and *"dermatologic rest"*, in which the skin is "left in peace", and guarded against external stimuli as itching, renewing the ointment and particularly cleaning, and which also includes a certain restriction of movement.

Another seven patients were first fixed in a wire splint instead of a plaster one (surgical rest), the diseased parts being left open. When this treatment failed, however, because the bandage got loose, these seven patients, too, were fixed in plaster bandages.

The course of treatment, including either daily or bi-weekly controls, lasted a fortnight, because we found that, during the first week after admission to the hospital for a rest-cure, the eczema remains unchanged ("freewheels") before the effect of the rest becomes evident. In four patients we left the bandage on for three weeks, in one patient for four weeks, and in nineteen patients it was necessary to re-make the bandage, either because it had broken, or become pulverized or because part of the skin was not properly closed off. In the case of six patients we applied a second bandage because the first fortnight had not been sufficient. Six patients stopped the treatment after about one week on account of domestic trouble, and one patient stayed away altogether. The female patients, often shirked the treatment, as they were literally handicapped by it. With regard to facial eczema in children we would make the following remarks. The scalp and the face were plasterbandaged to resemble a helmet with open vizor. No cotton was firstly applied to the scalp or facial skin. The eczematous skin, left free, was treated with zinc oxide-oil, which was not removed, the new layer being smeared over the old one. The ears were left free, on account of the risk of otitis media. It was interesting to note that the facial skin reacts differently from eczema of the other parts of the skin, which showed that the factor "rest" is necessary. For, the facial skin, with its mimic musculature, is the only part of the skin that the patient (child) is able to move itself, by wrinkling. In fact, the child could scratch its face without any outside help, by moving the facial skin against the plaster, and in those parts where this was possible the eczema either remained unchanged or did not get better so quickly. None-

* It is advisable to insert small pieces of dry gauze between the fingers in order to prevent purulent oozing.

theless, results were favorable, also as regards the not-plaster-bandaged part of the facial skin, which was kept under a zinc oxide-oil layer ("enclosure").

The investigation revealed that splints, one-half plaster of paris and one-half bandage were less satisfactory than entire closure in plaster of paris; further, that it was not necessary to immobilize the diseased part completely, but it proved essential that the bandage was firmly, although not too tightly, fixed. It was also found that there is no objection to plaster-bandaging a slightly moist eczema, but in general *a moist eczema may be a contra-indication for plaster-bandaging*. Some patients still complained of itching during the first week of treatment, but it was strikingly less than before, and the itching gradually became less as time went on. Where a joint had been enclosed it was slightly stiff the first day after removal of the bandage, but this was negligible.

When, after treatment, the plaster bandage was removed (*cave* damaging the skin underneath) it was found, that the skin was extremely scaly. *This pseudo-ichthyotic condition actually the normal insensible scaling of the skin, should not be confused with the eczema itself. Without, therefore, cleaning the skin with liquid paraffin or oil, it is quite impossible to form any judgment as to the result of the treatment.*

An interesting point to note is that in three cases the effect of the treatment was not seen until a week after removal of the bandage, and this without any other treatment having been applied. We regarded this feature as a *"belated reaction"* (cf. the postponed effect of X-rays). In three other cases there was a symmetrical "Mitreaktion" or co-reaction of the other arm or hand. In two of these patients the eczema relapsed a fortnight after the bandage was removed.

RESULTS AND CASE-REPORTS

Altogether 103 patients were included in the investigation. There were 52 men (4 children) and 51 women (9 children). It was said above that all these patients suffering from eczema for a long period had not been cured by the usual methods of treatment. Of the 90 adults, there were 51 with a chronic lichenified and/or pruriginous eczema of the face, the hands, the arms or legs. Varicose eczema was not submitted to the investigation and therefore only those "leg eczemas" were treated, when the patient did also reveal eczema elsewhere on the skin. The other 39 patients suffered from herpetoid eczema of the arms and/or the legs for over one month. 21 of these patients showed lichenified eczema in which a vesicular or pruriginous relapse had occurred. 12 patients had eczema since their youth and they were diagnosed as chronic pruriginous eczema (eczema flexurarum, atopic eczema, chronic allergic eczema). All the children suffered from atopic eczema, 4 only lichenified, 4 lichenified together with pruriginous papules, 2 lichenified and partially weeping and 3 strongly weeping eczema of the face, armfolds and kneefolds.

Cure or great improvement (the latter being often more evident than improvement after any other previous treatment inclusive of X-rays or hospitalization) was obtained in 27 males (including 2 boys) and 26 females (including 5 girls). The cure or improvement lasted longer than that obtained following X-rays or hospitalization in half of the cases. No effect was seen in 15 men and 16 women. The eczema got worse in 10 men and 9 women. A relapse, often slight, occurred in 9 men (2 boys) and 14 women (4 girls). The relapse usually occurred after about a fortnight, although sometimes earlier and in 4 cases after 6 weeks. This

frequency again was not higher than the frequency of relapse of any other therapy, including hospitalization.

As to the frequency of failures, three observations can be made. Firstly: the frequency did not appear to us to be higher than that from any other treatment and, in any case, the investigation revealed the great possibility of getting eczema cured by mere enclosure. The possibility of a relapse, as is also usual after other forms of treatment, does only prove the efficacy of the treatment for the time the treatment-conditions are maintained. Secondly: the treatment lasted only two weeks in the majority of cases, which is far shorter than almost every other treatment. It is not excluded whether a longer course of treatment would ensure a higher figure of cure or let it last for a longer period. But for the investigation as well as for the observation of the beneficial effect of the enclosure and rest a two-weeks period was regarded satisfactory. The third remark to the total frequency of failures, being about 50 % for a two-weeks treatment, concerns the fact that almost 40 % of the cases treated were herepetoid or weeping eczema, having a smaller chance of cure by enclosure due to the risk of secondary infection, which becomes evident from a badly smelling from underneath the bandage. 50 % of the failures occurred in 38 % of the cases being vesicular or wet. Shortly, the including of vesicular or weeping eczema in the investigation "spoiled" the figure of improvements in general, although we experience from having these patients included, that weeping eczema may become worse by plaster bandage. In those cases where no infection occurs also weeping eczema may be cured or greatly improved by the treatment under discussion. In four patients suffering from a weeping eczema the plaster bandage was applied after having powdered the eczematous skin with pulverized sulphonilamide. The effect was good, but these four cases were not included in the group, since we wanted any drug to be absent during the investigation.

CASE REPORTS

For brevity's sake not all cases are reported, a choice having been made from the protocols. For the same reason it should be mentioned that all these patients had already been subjected to the customary arsenal of therapeutic methods. Those who had also received X rays and/or had also been hospitalized are marked RO and HO respectively.

C. V. Girl (9) Atopic eczema since three years, especially bends of the knees. (RO. HO) Relapse within two weeks of discharge from a dermatological clinic. Then both knees in plaster bandage. The child walked with stiff legs, but the parents gladly put up with this because of the bad cutaneous condition of their daughter. After two weeks considerable improvement, no further treatment was necessary up to the present.

V. P. Boy (4) Extensive atopic eczema since 3 years on face, neck, arms and legs. (HO) In May 1954 UV treatment. During the summer improvement, but in the winter relapse. Re-admitted to our hospital, but again after 3 weeks relapse. Plaster bandage on both legs, and around the neck and a part of the head. Cured after 2 weeks. Control one month afterwards, when there was a slight relapse in the neck. No further treatment was given.

FIG. 1

FIG. 2

FIG. 1. Patient V. Chronic eczema of the left hand not treated

FIG. 2. Same patient and same eczema of the right hand after two weeks of plaster-bandage treatment.

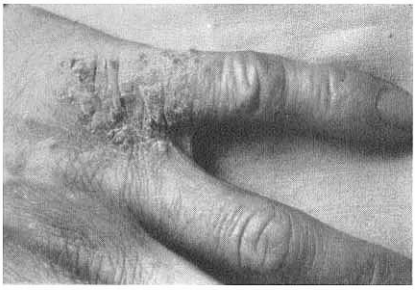

FIG. 3

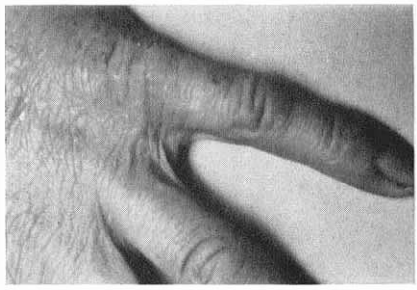

FIG. 4

FIG. 3. Patient J. Left hand before plaster bandage treatment

FIG. 4. Same patient. The left hand after two weeks of plaster bandage treatment

V. R. Man (51) Lichenified eczema of both hands. (RO) Left hand in plaster bandage. After 2 weeks *status quo ante*, but no further therapy was given. One week later, hand much better and—at the patients request—right hand in plaster bandage. Same success. Control after one month showed both hands still to be in perfect condition.

A. J. Girl (3) Atopic eczema since 1 year old. (HO) Right knee in plaster. Completely cured with symmetrical co-reaction, after three weeks. One month later slight relapse for which a calamine lotion was prescribed. Two weeks later the father reported that the lotion had hardly been necessary. Two more weeks, again the child was seen without needing any treatment. In this patient there was a narrow strip of eczema just inside the edge of the plaster bandage. When this part of the bandage had been closed by another plaster-bandage (after the second week) this strip healed within the 3rd week.

A., Woman (50) Eczema manuum for over two years (RO). Left hand in plaster-bandage. At the patient's request the bandage was removed after the 9th day, the eczema being greatly improved, on both hands. The most likely explanation of this co-reaction, to us, seems the fact that the handicap to the one hand caused the patient to spare also the other one. In this patient the thumb, and part of the ball of the thumb were left free, when the hand was plastered up. The cured part of the skin was found to be sharply delimited from the non-bandaged part. (A similar finding was done in a 11 year old boy with lichenified eczema of both hands after the bandage was removed at the sixteenth day.)

FIG. 5

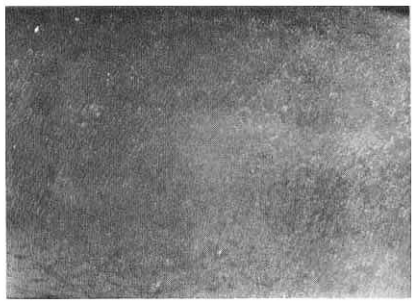

FIG. 6

FIG. 5. Patient R. Right forearm obstinate papular eczema for many years. Previously treated with X rays, etc.

FIG. 6. Same patient, same condition of the left forearm having been treated for two weeks with plaster bandage enclosure.

FIG. 7

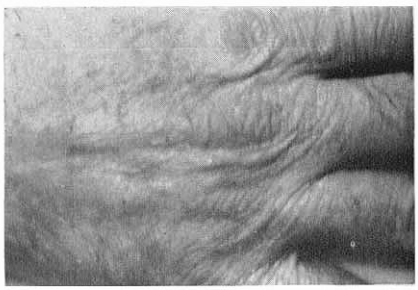

FIG. 8

FIG. 7. Patient K. Right hand before treatment

FIG. 8. The same hand after two weeks of treatment with plaster bandage

W. Girl (2) Both arms and the face received a plaster-bandage. The parents kept in touch every day by telephone, and brought the child back every 3rd day. Report after the first three days that the child had slept well. On the 8th day the father called telling us, that after 5 days of good sleep and almost no itching, the child had slept badly. We found erosive patches on the face just inside the edge of the bandage, where the child had been able to scratch by means of the facial musculature being wrinkled against the plaster-bandage-edge. A piece of cotton wool was inserted and after this the eczema took a favorable course. Because the parents reported that the child complained of having pain in the ears, the bandage over the ears was cut open. Fortunately no otitis could be found, but from this we regarded it important to keep the ears open when the face is plaster-bandaged. When after a fortnight the plaster-bandage was removed, the skin showed much improved. The child, however, immediately cried from itching and one day later it had the facial skin again eroded and weeping from intensive scratching. Admittance to the hospital, accompanied by all measures to prevent scratching resulted in improvement after one month. Three days after discharge, the eczema had completely relapsed and re-hospitalization was necessary.

V. K. Man (59) For over 15 years lichenified eczema, partly weeping, partly crusty, of the arms and hands. Tests for occupational eczema were negative. Staying away from his work, various local treatments, including RO had been tried in vain. The left arm was treated with a plaster bandage. After two weeks the bandage was removed and there was found a considerable improvement, except of the non-plastered hand. The entire hand was

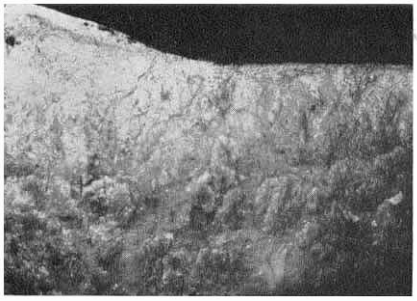

FIG. 9

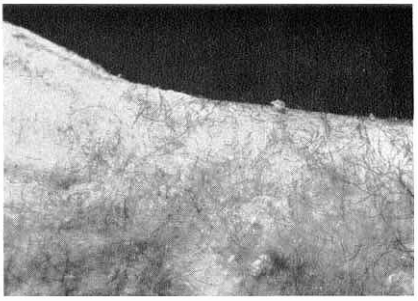

FIG. 10

FIG. 9. Patient KE. Lower arm chronic eczema before plaster bandage
FIG. 10. Same patient after two weeks of plaster bandage enclosure

FIG. 11. Same arm flexor aspect after plaster bandage treatment

then plastered with good results. The hands were not completely cured, but they were better than he had experienced after X-rays, etc.

Gr. Man (18) Widespread lichenified pruriginous atopic eczema from youth. (HO. RO) Right arm in plaster-bandage. After 2 weeks lower arm including the wrist greatly improved, but the elbow had become worse. The elbow was again enclosed in plaster bandage for two more weeks. After removal of the bandage the elbow too was much better. The skin of the arm had become smoother, although the dirty brownish colour had not disappeared and the itching had not vanished. The patient was then given an alcoholic zinc oxide lotion, with which he had been treated many times previously. The condition was kept in check. One month later the condition had still more improved and the patient stated that the skin was better than it had ever been.

H. Boy (14) Lichenoid and herpetoid eczema of both hands almost ever since first year of age. The right hand, apart from the thumb was enclosed in a plaster bandage. After one week, the skin was dry and scaly. The boy wanted to use his right hand and we switched over to the left hand. After two weeks there was a striking improvement of the skin except the part which had not been enclosed, although this part of the hand too was partly cured.

Kn. Man (61) Lichenified eczema of both legs for "many years". There were no varicose veins visible. (HO. RO) Two weeks after a plaster bandage the left leg was much improved and when the patient reported he stated "finally I have no itching".

R. Woman (34) Eczema with lichenifications of both arms for 7 months. Right arm in plaster-bandage. After two weeks satisfactorily improved, but still itching and right index

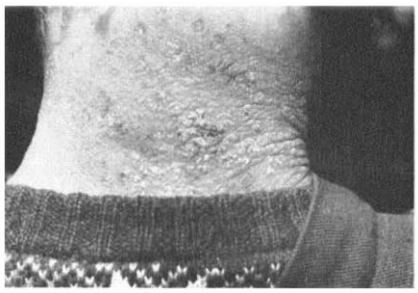

FIG. 12

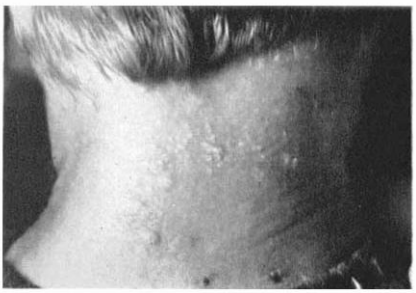

FIG. 13

FIG. 12. Child P. Chronic eczema of the neck before plaster of bandage enclosure
FIG. 13. Same child after two weeks of enclosure treatment

FIG. 14. Same child after one other week: belated reaction

FIG. 15. Patient A. Lichenified eczema of the hand improved only under plaster bandage treatment. The thenar part, which had not been enclosed and which was kept free, did not improve.

finger no improvement at all. This finger was again enclosed in plaster bandage. After two weeks the finger was almost cured, but the left arm looked better than the right arm, which had been treated a month before. Second treatment of the right arm—at request of the patient, because she had experienced the beneficial effect of the previous treatments. This resulted in cure. Two months later there was no relapse and the patient was discharged.

In three women and one man we did not apply a plaster-bandage of plaster of paris, but a zinc glue bandage thus keeping the skin enclosed although not so intensively as it had been in plaster of paris. In one case of a woman the bandage became loose and the treatment failed. In the other cases—all chronic eczemas of the arm—there was a remarkable improvement after a two weeks period.

CONCLUSIONS

1. In the large majority of cases the result of the plaster-treatment and the effect of "dermatologic rest" by enclosure was so striking that we consider the present communication to be justified. Failures were no more frequent (if not less) than from any other treatment, including hospitalization and X ray-therapy. While *we do not recommend* the plaster treatment as a routine therapy of eczema, this investigation has served to point a way towards the solution of a difficult problem.

2. We may assume—because of the ever-existing possibility of spontaneous cure—that the influence of specifics on a *hospitalized* patient (and perhaps also certain other dermatologic cases) may be easily overestimated. Proof of this may be found in the fact that continuance of the hospital treatment after discharge from the hospital does not always prevent a recurrence.

3. Does hospitalization have a psychic (suggestive) action? Since a great majority of patients recover equally well through "dermatologic rest" by enclosure, a cure need not necessarily be effected by hospitalization. It might be possible that the plaster bandage has a suggestive action, but, if so, a badly fitting bandage (when the patient believed it fitted well) would also act suggestively. It would, moreover, be improbable that such a relatively large number of patients, each with his or her own psyche or psychic conflict, could be cured with the aid of one and the same, uniform, method: the plaster bandage. When the patient is left in his own milieu and occupation, the enclosure bandage will nevertheless have its effect on the diseased skin. Although the treatment was naturally applied with the permission of the patients or the parents, many of them were rather sceptical about the possible results. In some cases we could only expect an "anti-suggestive" repulsing reaction on the part of the patient. This, too, was "nullified" by the bandage treatment.

4. Is the success of hospitalization due to the fact that it frees the patient from the allergens which are presumed to cause the eczema? By the enclosure bandage the skin may recover also when the patient's daily life goes on as usual, and often even more quickly than after admission to a hospital. That the enclosed skin can be protected against the action of allergens is contrary to the fundamental principle of allergy, because the patient—at least in some cases—will react topically and even universally, when the allergen "intervenes" in another portion of the skin. Contact dermatitis was excluded from the investigation.

5. How does the rest of the skin behave? During the treatment the rest of the skin was either not treated at all, or we let the patient continue with the treatment he had followed earlier (in vain). The skin which was not enclosed or was not well enclosed did usually show no reaction. In some cases the recovered area was sharply defined to the nonenclosed part. In three cases we observed a beneficial symmetrical co-reaction after application of the plaster-bandage.

6. *The plaster treatment does not prevent a relapse;* it acts, however, more quickly than most other methods. (See also sub 1.) *Our investigation, for that matter, was not intended to introduce the plaster-bandage as a routine therapy, but to demonstrate the effect of mere enclosure (and rest) in a great number of cases.*

Conclusion as to the results was arrived at after two weeks, i.e. too short a period as compared to the usual 4–6 weeks of hospitalization. Apart from this, both irradiation and ointment therapies are equally often failures.

7. In the cases of ointment-bandages, even if used only to protect the patient's clothing, it is not unlikely that the bandage is more effective than the ointment, not to underestimate the value of the latter.

8. It is probable that the ointment bandage acts physically rather than chemically. At any rate the plaster-bandage, with no ointment at all, had a distinctly favorable effect.

9. It might be remarked, that the plaster bandage has a psychic or at any rate, a suggestive, influence. In case this might be held by some to constitute an explanation of the phenomenon, it should be stated that black salves, radiation and a badly fitting bandage (which ought to act just as suggestively) were not as effective.

10. The plaster bandage tends to give the impression of being a rather rigorous type of research. It is, however, less radically interfering and less costly than either hospitalization or a temporary removal to another city. Why should the skin be tackled less energetically than any other diseased organ. In certain cases the plaster-bandage *may* prove a method of therapy, although *the investigation was especially intended* to demonstrate that enclosure (and partial—"dermatologic"—rest) alone, can already have a favorable effect on eczema.

SUMMARY

The result of an *investigative* treatment of 100 eczema patients with the aid of a plaster of paris bandage, without ointment or other therapy, was so striking that it may open up a new perspective regarding the effect of local and other therapy of eczema. Enclosure without ointment, and/or limitation of freedom of movement by the affected part of the body (*"dermatologic rest"*) were found to exercise a favorable influence. Existing psychic and allergic theories concerning the cure of dermatoses by hospitalization or a change of surroundings, might be seen in another light from the fact that the skin may recover also through enclosure and *local* rest. The possible suggestive effect from this form of treatment has been taken in consideration but was not found to be of major importance. The physical aspect of the treatment is highly important and sometimes perhaps more than the chemical or psychological aspects. Moreover, as patients very often do not (properly) follow the doctor's instructions, the diseased skin should be treated with as much intensity as any other diseased organ.

Judgment of the condition of the skin after removal of the bandage is possible only after the skin has been carefully cleaned with oil or liquid paraffin, when the horny scales that normally form underneath the plaster bandage, which has been in position for a long time, are removed. The investigation is not applicable to oozing eczemas.